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A New Species of the Genus *Dasyatis* (Elasmobranchii: Dasyatididae) from Southern Japan and Lectotype Designation of *D. zugei*

Kiyonori Nishida and Kazuhiro Nakaya

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Abstract *Dasyatis acutirostra* sp. nov. is described on the basis of 21 specimens from the East China Sea and southern part of Japanese waters. The new species is characterized by having small eyeball (2.4–3.8% of disc width), long snout (36.9–43.9% of disc width), 129–135 pectoral radials, 23–28 pelvic radials, 121–139 prespine separate vertebral centra and 22–24 intestinal valve turns, the absence of oral papillae, and the presence of ventral tail fold. Lectotype and paralectotypes were designated for *D. zugei* (Müller et Henle, 1841). Taxonomic confusion among *D. zugei* and its allied species was worked out and *D. cheni* Teng, 1962 was synonymized with *D. zugei*.

The genus *Dasyatis* Rafinesque, 1810, is one of the five genera of the family Dasyatididae, and includes about 33 species (Compagno and Roberts, 1984). It is characterized by possessing a tail longer than disc, and a ventral tail fold not extending to tip of tail. Disc shape of the genus is variable, e.g., trapezoidal or diamond-shaped (Compagno and Roberts, 1984). Among the species with diamond-shaped disc, *D. zugei* (Müller et Henle, 1841), *D. geijskesi* Boeseman, 1948 and *D. cheni* Teng, 1962 differ from others by having a small eyeball and a long snout. *Dasyatis microphthalmus* Chen, 1948 which is now allocated to the genus *Himantura* also shows very similar features. Their classification has not been studied enough and confusing (e.g., Jordan and Fowler, 1903; Fowler, 1941; Tanaka, 1951; Teng, 1962; Chen and Chung, 1971), and they form a species complex. In addition, we found a similar shaped undescribed species in some institutional collections. Discovery of the new species led us to the reinvestigation of this species complex.

Herein we describe a new species of *Dasyatis* and clarify the *zugei*-complex with the designation of the lectotype.

Materials and methods

This paper is based on material deposited in the Faculty of Agriculture, Kyoto University (FAKU), Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University (HUMZ), Muséum National d'Histoire Naturelle (MNHN), Museum of the Tokyo University of Fisheries (MTUF), Rijksmuseum van Natuurlijke Historie (RMNH), Taiwan Fisheries Research Institution (TFRI), and U. S. National Museum of Natural History (USNM).

Methods and terminology of counts and measurements follow Compagno and Roberts (1984) except for the following: disc length—greatest distance from snout tip to posteriormost point of pectoral fin; precloacal length—distance from snout tip to anteriormost point of cloaca; snout to greatest width—midline measurement from snout tip to a transverse line between outermost margins of disc; cloaca to pelvic fin tip—midline measurement from anteriormost point of cloaca to a transverse line between posteriormost margin of pelvic fins; clasper length—distance from posteriormost point of pelvic fin base to distal tip of clasper; tail width and depth—taken at posterior margin of pelvic fins; prespine length—distance from snout tip to base of first tail spine. Disc width (DW) is considered the standard measure of size in this study. Counts of radial cartilages and vertebrae were made from radiographs according to Compagno and Roberts (1982).

Dasyatis acutirostra sp. nov.

(New Japanese name: Yajiri-ei)

(Figs. 1, 2)

Dasyatis zugei (not of Müller and Henle, 1841): Jordan and Fowler, 1903: 660 (in part); Fowler, 1941: 429 (in part); Teng, 1962: 234, fig. 64 (in

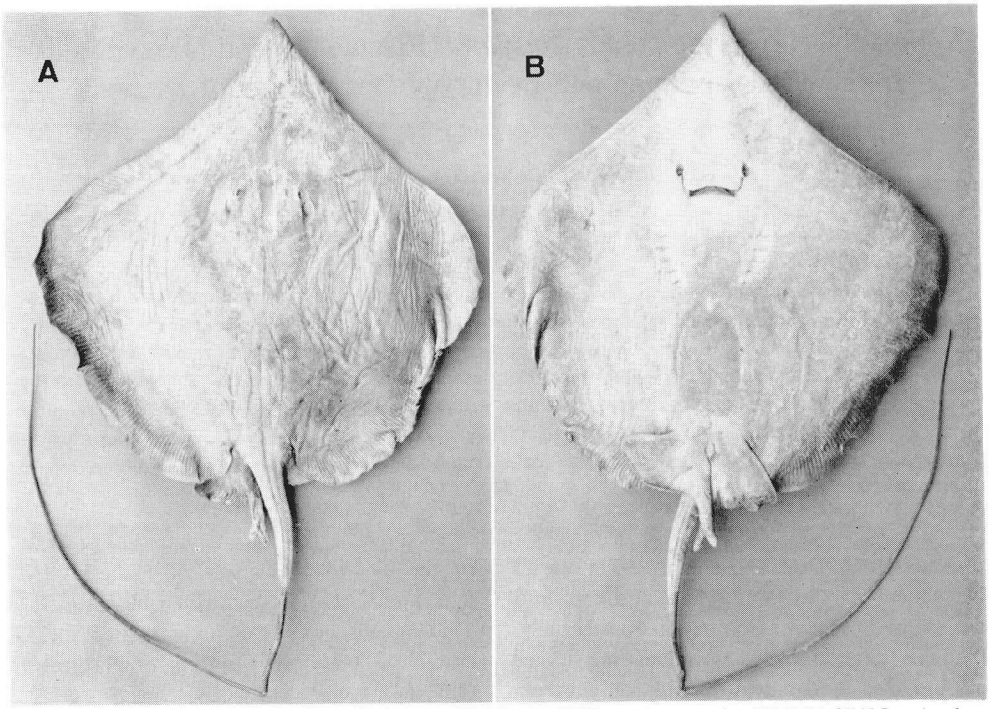

Fig. 1. *Dasyatis acutirostra* sp. nov., holotype, 724.8 mm DW, mature male, HUMZ 97435. A, dorsal view; B, ventral view.

part).

Dasybatus zugei (not of Müller and Henle, 1841): Garman, 1913: 398 (in part); Tanaka, 1951: 418, pls. 113, 114.

Dasyatis microphthalmus (not of Chen, 1948 a): Chu, 1960: 165, figs. 153–155; Chu and Meng, 1987: 40, fig. 128.

Dasyatis bennetti (not of Müller and Henle, 1841): Faculty of Fisheries, University of Nagasaki, 1973: 399, pl. 20.

Holotype. HUMZ 97435, adult male, 724.8 mm DW, 30°09′–31°30′N, 124°13′–127°53′E, East China Sea, depth 53–142 m, trawl net, Apr. 6–11, 1968.

Paratypes. FAKU 101210, immature male, 354.2 mm DW, Japan (other data unknown); USNM 51358, immature male, 287 mm DW, Kobe, Japan; HUMZ 107583–107599, 8 males and 9 females, 281.4–348.2 mm DW, Japan (other data unknown); MTUF 25267, female, 515.6 mm DW, Nagasaki, Japan, Mar., 1971.

Comparative material. *Dasyatis geijskesi*, USNM 158726, immature male, 292 mm DW, tropical western Atlantic.

Diagnosis. Snout long and triangular, preorbital snout length 36.9–43.9% of DW. Eyes small, eyeball diameter 2.4–3.8% of DW. Interorbital width 23.3–24.1% of preorbital snout length. Floor of mouth without elongate papillae. Tail long and whip-like with a ventral tail fold. Prespine separate centra 121–139; pectoral radials 129–135; pelvic radials 23–28; intestinal valve turns 22–24.

Description. Proportional measurements and counts are given in Tables 1 and 2. Disc moderately flat, acutely pointed anteriorly, rounded posteriorly. Disc width about equal to disc length. Snout much produced. Preorbital snout length 2.6 in holotype (2.3–2.7 in paratypes) in DW and equal to preoral snout length. Anterior margins of disc concave, posterior margins convex. Outer and posterior angles of disc rounded. Eyes small; eyeball diameter 15.3 (10.0–16.3) in preorbital snout length, 3.6 (2.5–4.0) in interorbital width, 2.0 (1.3–2.1) in spiracle. Interspiracular width 2.8 (2.6–3.1) in preorbital snout length.

Mouth weakly arched; mouth width 4.2 (4.3–5.2) in preoral snout length. Teeth pavement-like, arranged in quincunx, with a cusp in adult male, and without cusp in female and young male. Nasal curtain with a fringed, nearly straight posterior margin; nasal curtain length 6.4 (6.8–8.4) in preoral snout length. Internarial width

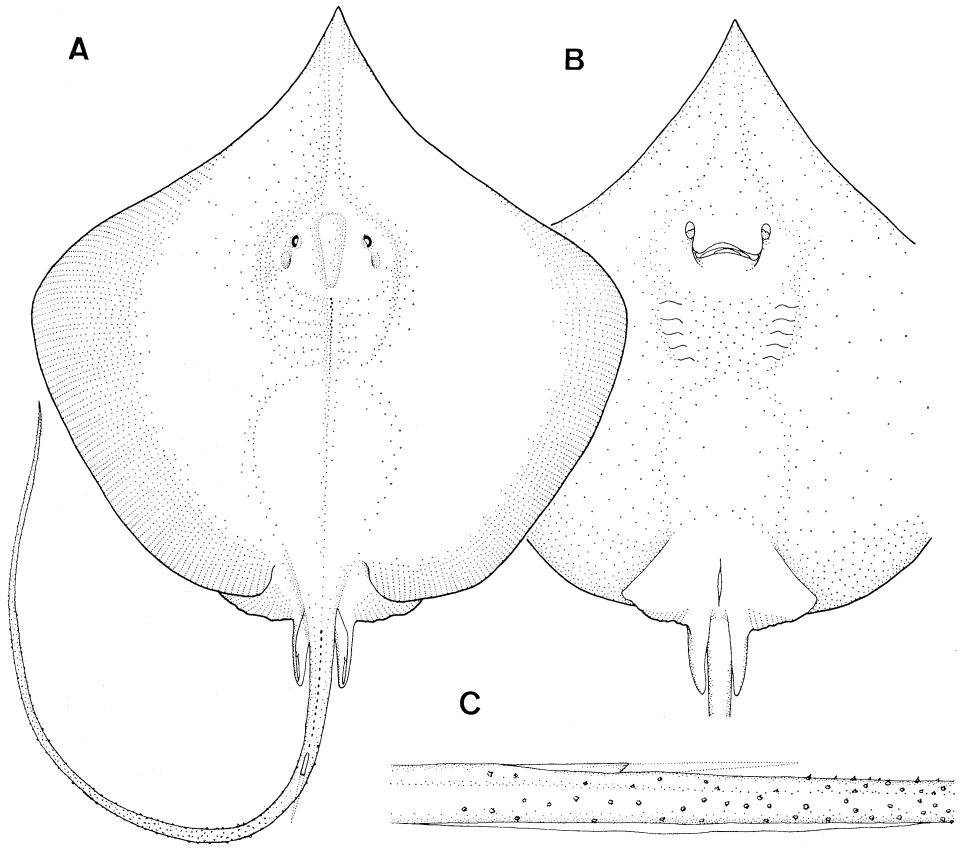

Fig. 2. *Dasyatis acutirostra* sp. nov., holotype, 724.8 mm DW, mature male, HUMZ 97435. A, dorsal view; B, ventral view; C, lateral view of tail.

3.2 (3.3–4.3) in preoral snout length. Head length 1.8 (1.6–1.8) in DW. Preoral snout length 1.5 (1.4–1.5) in head length; prebranchial length 1.2 (1.2) in head length. First interbranchial width 3.1(3.0–3.6); 5th interbranchial width 4.5 (4.4–4.9) in head length. Dorsal surface of disc with a row of 30 tubercles (absent) along midline of back in the center of disc and another 16 tubercles (absent) in front of the tail spine.

Ventral surface of disc smooth. Precloacal length 1.1 (1.0–1.2) in DW. Pelvic fin widely triangular, outer angles blunt, anteriormost point of cloaca to tip of pelvic fin 6.0 (6.0–7.8) in DW.

Tail long and whip-like; anteriormost point of cloaca to tail tip 1.5 (1.5–1.7) in total length. Tail with one (one or two) spine. Prespine length 2.0 (1.8–2.4) in total length; spine length about 13.0 (6.9–12.8) in DW. A very inconspicuous keel present behind the spine (neither fold nor keel present). Upper and lateral sides of tail behind spine rough with small asperities (Fig. 2C). A low but distinct ventral tail fold present just below the spine, the fold length 12.1 (10.4–12.9) in anteriormost point of cloaca to tail tip (Fig. 2C). No dorsal and caudal fins.

Clasper of adult male long and stout, oval in cross section and somewhat depressed. Pseudosiphon absent.

Color pale brown above, whitish below after preservation in formalin.

Distribution. East China Sea and southern part of Japanese waters.

Etymology. The specific name is a combination of the Latin, *acuti* (meaning "acute") and *rostra* (meaning "snout").

Remarks. The new species is included in the family Dasyatididae (sensu Bigelow and Schroeder, 1953), because it is characterized by a whip-like tail, absence of cephalic fins or rostral lobes, eyes and spiracles on top of head, disc width about

equal to disc length, and absence of long slender median process on pelvic girdle. In having such characters as a tail longer than disc, tail spines and a ventral tail fold not extending to tip of tail, the present new species is a member of the genus *Dasyatis* Rafinesque, 1810. In the disc shape *Dasyatis acutirostra* resembles *D. zugei* (Andaman Sea, East and South China Seas and western Pacific), *D. geijskesi* (tropical western Atlantic) and *D. cheni* (from Taiwan). However, the new species is clearly distinguishable from *D. zugei* by the following characters: eyeball diameter is 10.3–15.2 in preorbital snout length in *D. acutirostra* (only 3.7–7.5 in *D. zugei*); dorsal tail fold is usually absent, or if present, it is very inconspicuous keel (relatively distinct); number of total pectoral radials is 129–135 (106–114), pelvic radials 23–28 (17–23) and prespine separate centra 121–139 (95–100); number of intestinal valve turns 22–24 (16–18). In addition, they are different in the size of maturity. *Dasyatis zugei* matures at about 200–300 mm DW, because a female specimen of 291 mm DW is already gravid (Teng, 1962; pers. observ.) and a male specimen of 238 mm DW has stout and long claspers (9.3% of DW), while a male specimen of *D. acutirostra* of 354.2 mm DW has still soft and small claspers (2.3% of DW).

Dasyatis acutirostra also differs from *D. geijskesi* by the following characters: 1st interbranchial width is 5.2–5.9 in DW (8.1–8.7 in *D. geijskesi*); disc length is 2.3–2.8 in total length (3.9, even in mutilated specimen 2.9); pelvic fin is triangular (very long and falcate, and anterior rays are elongate and slightly projecting beyond lateral margins of disc).

Dasyatis acutirostra has been confused with *D. zugei* (e.g., Jordan and Fowler, 1903; Garman, 1913; USNM 51358 in Fowler, 1941; TFRI 2940 in Teng, 1962). Examination of the specimens and descriptions of Jordan and Fowler (1903) and Fowler (1941) revealed that one (USNM 51358) of their specimens is apparently *D. acutirostra* and that Jordan and Fowler erroneously described *D. zugei* partly based on *D. acutirostra*. This misidentification was followed by Garman (1913), Fowler (1941), and Teng (1962). Although Teng's specimen (TFRI 2940) was lost (Mr. H. C. Yang, pers. comm.), it is judged to have been *D. acutirostra*, because it has a small eyeball (3.0% of DW), long preocular snout (40.6% of DW) and a ventral tail fold.

Teng (1962) considered *D. microphthalmus* as a synonym of *D. zugei*. Though the holotype of *D. microphthalmus* was also lost (Drs. S.-C. Shen and M.-J. Yu, pers. comm.), according to its original description, *microphthalmus* lacks dorsal and ventral tail folds (ventral tail fold present in *Dasyatis* species). This character places *microphthalmus* under *Himantura* (Compagno and Roberts, 1982; present study). *Himantura microphthalmus* is distinguished from *D. acutirostra* by having the following characters: ventral tail fold absent (present in *D. acutirostra*); a patch of small asperities before tail spine (absent); interorbital width 3.5 in preorbital snout length (4.0–5.2). *D. cheni* is also a synonym of *D. zugei* (see remarks in *D. zugei*).

Dasyatis zugei (Müller et Henle, 1841)

(Japanese name: Zugu-ei)

(Fig. 3)

Trygon zugei Müller and Henle, 1841: 165, pl. 55 (original description); Günther, 1870: 481; Day, 1878: 739, pl. 190, fig. 3; Annandale, 1909–1910: 33, pl. 3, fig. 7, pl. 4, fig. 2.

Trygon crozieri Blyth, 1860: 45 (original description).

Dasyatis zugei: Jordan and Fowler, 1903: 660 (in part); Fowler, 1941: 429 (in part); Chen, 1948 a: 7, fig. 5; Chen, 1948 b: 29; Chu, 1960: 167, fig. 156; Misra, 1969: 152, text-fig. 49; Chen and Chung, 1971: 35, fig. 22; Nakaya, 1984: 15, pl. 17, fig. H; Chu and Meng, 1987: 40, fig. 129.

Dasybatus zugei: Garman, 1913: 398 (in part); Wu, 1929: 13, fig. 10.

Dasyatis cheni Teng, 1962: 237, fig. 65 (original description); Chen and Chung, 1971: 36.

Dasyatis (*Amphotistius*) *zugei*: Monkolprasit, 1984: 107, fig. 55.

Lectotype. MNHN 1987-152, immature male, 137.0 mm DW, Macao, China.

Paralectotypes. MNHN A 7934, immature male, 182.5 mm DW, Pondichery, India and immature female, 208.0 mm DW, Pondichery, India; MNHN 2447, immature male, 106.6 mm DW, Macao, China; RMNH D 2447, female 228 mm DW, Japan; RMNH D 2448, male, 180 mm DW, Japan.

Comparative materials. TFRI 2776 (holotype of *D. cheni*), mature female, 291 mm DW, Keelung, Taiwan, Sep. 28, 1956; USNM 75870, mature male, 228.9 mm DW, Japan? (other data unknown); USNM 75872, immature female, 127 mm DW, Japan; HUMZ 105941, mature male, 238.0 mm DW, Yawatahama, Ehime Pref., Japan, May, 1954; HUMZ 107599, immature

Table 1. Proportional measurements (in % of disc width) for *Dasyatis acutirostra* sp. nov. and *D. zugei*.

Disc width	*D. acutirostra* sp. nov.		*D. zugei*		
	Holotype 724.8 mm	Paratypes 281.4–515.6 mm (n=20)	Lectotype 137.0 mm	Paralectotypes 106.6–228 mm (n=5)	Non-types 127–291 mm (n=5)
Total length	243.2	234.1–296.2	230.9	253.9–286.2	209.7–259.1
Disc length	100.9	99.1–106.1	98.1	94.6–103.3	95.3–104.9
Eyeball diameter	2.5	2.4–3.8	5.2	4.5–6.6	4.1–6.2
Cornea	1.5	1.6–2.8	4.0	3.1–4.8	3.8–4.7
Interorbital width	8.9	8.5–9.8	9.8	8.1–10.5	8.3–10.9
Spiracle	5.0	4.2–5.9	5.9	5.3–6.7	5.2–7.1
Interspiracular width	13.6	13.4–15.1	14.5	12.5–13.3	13.5–15.7
Preorbital snout length	38.1	36.9–43.9	29.9	24.6–33.8	26.9–30.8
Preoral snout length	37.9	38.3–44.2	32.2	27.0–35.3	26.7–33.9
Nasal curtain length	5.9	5.0–6.0	5.3	5.0–5.9	4.5–10.8
Internarial width	11.7	10.4–11.6	9.6	7.9–11.6	9.4–11.5
Mouth width	9.0	8.1–9.2	9.9	8.8–10.6	7.6–9.9
1st gill slit	2.7	2.5–2.9	2.2	1.8–6.7	2.2–3.1
5th gill slit	1.8	1.4–1.9	2.0	1.8–6.1	1.5–2.2
1st interbranchial width	18.1	17.0–19.2	17.9	11.7–21.2	17.7–19.7
5th interbranchial width	12.5	12.5–13.6	11.8	8.3–13.9	12.4–13.4
Prebranchial length	47.0	47.4–53.0	40.6	38.6–45.7	38.6–45.7
Head length	56.0	56.7–63.0	54.2	50.6–59.5	48.5–58.3
Precloacal length	88.1	86.1–95.3	86.2	81.1–94.6	81.5–95.2
Snout to greatest width	53.8	52.7–61.4	48.8	52.5–55.5	51.6–59.1
Cloaca to pelvic fin tip	16.6	12.9–16.6	14.5	13.9–24.1	15.1–19.6
Clasper length	10.9	2.3–3.2	3.3	2.4–13.9	4.1–9.3
Tail width	4.4	4.3–5.2	4.0	3.7–5.5	5.6–7.6
Tail depth	2.8	2.5–3.1	2.5	2.8–3.5	3.4–4.0
Prespine length	120.3	116.8–128.5	121.2	124.8–134.6	119.6–133.7
Dorsal tail fold length	absent	absent	65.7	49.9–52.6	56.3–67.2
Ventral tail fold length	18.3	15.0–22.9	90.7	83.3–85.8	71.5–86.7

Table 2. Counts for *Dasyatis acutirostra* sp. nov. and *D. zugei*.

Disc width	*D. acutirostra* sp. nov.		*D. zugei*		
	Holotype 724.8 mm	Paratypes 281.4–515.6 mm (n=20)	Lectotype 137.0 mm	Paralectotypes 106.6–228 mm (n=5)	Non-types 127–291 mm (n=5)
Oral papillae	absent	absent	absent	absent	absent
Upper tooth rows	49	40–51	43	40–55	41–53
Lower tooth rows	43	39–49	39	40–45	41–55
Intestinal valve turns	23	22–24			16–18
Total pectoral radials	131	129–135	112	108–113	106–114
Propterygial radials	53	52–55	47	45–52	46–49
Mesopterygial radials	19	18–21	20	14–19	14–19
Metapterygial radials	59	56–60	45	43–45	46–48
Pelvic radials male	24	23–25	18	18	17–19
Pelvic radials female		26–28		20	20–23
Prespine separate centra	131	121–139	95	95–97	95–100
1st synarcual free centra	2	2–5	4	4	3–4
Intersynarcual centra	4	2–5	3	2–4	2–3
2nd synarcual centra		15–19		8–9	12–16
2nd synarcual+monosp.	39	36–43	32	30–32	30–32
Prespine diplospondylous	86	76–90	56	57–58	58–64
Postspine diplosp.	14	5–12	4	4–5	3–4

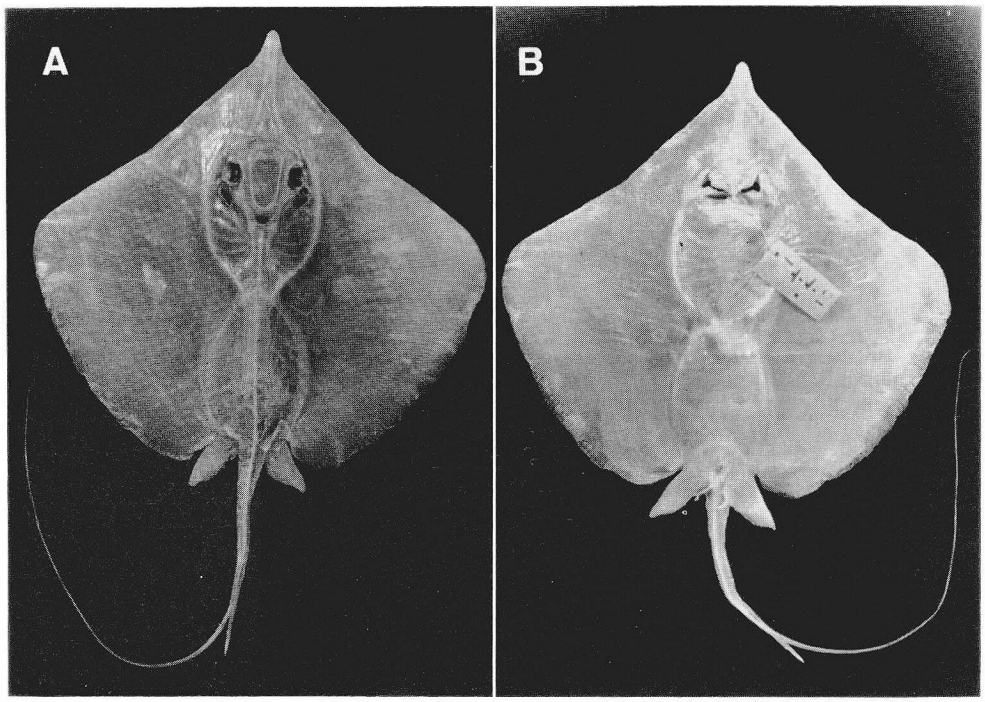

Fig. 3. *Dasyatis zugei*, lectotype, 137.0 mm DW, immature male, MNHN 1987-152. A, dorsal view; B, ventral view.

male, 168.7 mm DW, Yawatahama, Ehime Pref., Japan, May, 1954; MTUF 25124, female, 170.0 mm DW, off Mogi, Nagasaki Pref., Japan, Apr. 12, 1962.

Diagnosis. Snout long and triangular, preocular snout length 24.6–33.8% of DW. Eyes small, eyeball diameter 4.1–6.6% of DW. Interorbital width 28.1–35.7% of preorbital snout length. Floor of mouth without elongate papillae. Tail long and whip-like with dorsal and ventral tail folds. Prespine separate centra 95–100; pectoral radials 106–114; pelvic radials 17–23; intestinal valve turns 16–18.

Description. Proportional measurements and counts are given in Tables 1 and 2. Disc rhomboid, moderately flat. Disc width nearly equal to disc length. Snout much produced. Preorbital snout length 3.3 in lectotype (3.0–4.1 in paralectotypes and 3.2–3.7 in non-types) in DW and a little shorter than preoral snout length. Anterior margins of disc slightly concave, posterior margins convex. Outer and posterior angles of disc rounded. Eyes small; eyeball diameter 5.8 (3.7–7.5, 4.3–6.0) in preorbital snout length, 1.9 (1.2–2.2, 1.4–2.2) in interorbital width, 1.1 (1.0–1.4, 1.0–1.1) in spiracle. Interspiracular width 2.1 (1.9–2.7, 2.0–2.1) in preorbital snout length.

Mouth weakly arched, mouth width 3.2 (3.0–3.5, 3.0–3.9) in preoral snout length. Teeth pavement-like, arranged in quincunx, single cuspid in adult male and without cusp in female and young male. Nasal curtain with a fringed, nearly straight posterior margin; nasal curtain length 6.0 (4.9–7.1, 2.9–6.4) in preoral snout length. Internarial width 3.3 (2.6–3.3, 2.5–3.3) in preoral snout length. Head length 1.8 (1.7–2.0, 1.7–2.1) in DW. Preoral snout length 1.7 (1.7–2.0, 1.7–2.1) in head length, prebranchial length 1.3 (1.2–1.3, 1.3) in head length. First interbranchial width 3.0 (2.7–3.0, 2.7–3.0), 5th interbranchial width 4.6 (4.0–4.4, 3.9–4.4) in head length.

Dorsal surface of disc naked. A row of 5 to 9 tubercles in front of the tail spine present in adult specimens but absent in young.

Ventral surface of disc smooth. Precloacal length 1.2 (1.1–1.2, 1.1–1.2) in DW. Pelvic fin triangular; anteriormost point of cloaca to tip of pelvic fin 6.9 (4.1–7.2, 5.1–6.6) in DW.

Tail long and whip-like; anteriormost point of cloaca to tail tip 1.6 (1.5, 1.5–1.8) in total length. A spine on tail; prespine length 1.9 (2.0–2.1, 1.6–

2.0) in total length; spine length 6.8 (6.2–13.3, 4.7–6.4) in DW. A low dorsal tail fold originating behind the tip of spine, gradually disappearing posteriorly. Slightly higher ventral tail fold originating just below the base of the spine, gradually disappearing posteriorly. No dorsal and caudal fins.

Clasper of adult male long and stout. Pseudosiphon absent.

Color pale or reddish brown above, whitish below in specimens in alcohol, but chocolate brown above, whitish below with brown margin in fresh specimens.

Distribution. Southern Japan to Indian waters.

Remarks. Müller and Henle (1841) described this species based on seven syntypes. Four of them are deposited in MNHN and two in RMNH. The last syntype, deposited in Museum für Naturkunde der Humboldt Universität, Berlin, was lost (Dr. H. J. Paepke, pers. comm.). Although there are some proportional variations caused by their different way of preservation, all syntypes agree with the original description.

According to Temminck and Schlegel (1850), the illustration of Müller and Henle (1841) was based on a reduced drawing which Burger had made in Japan on a fresh male specimen of approximately 835 mm total length. All syntypes (253–595 mm total length) examined herein are smaller than the illustrated specimen. This suggests that the illustrated specimen may have been a specimen in Berlin or was not preserved after the drawing. Anyway, the illustrated specimen does not exist and it is considered that the illustration is not suitable for the lectotype, because six syntypes still exist and they are more informative than the illustration.

Müller and Henle (1841) gave some proportional measurements of the largest specimen with 182 mm DW (sex unknown). Four syntypes (RMNH D 2447, 2448, MNHN A 7934 male and female) are close to this described specimen in their size. However, it is impossible to determine the described specimen with sufficient certainty. In addition, RMNH D 2447 and 2448 are stuffed and deformed, and thus lack the diagnostic internal characters. The male and female specimens MNHN A 7934 are in alcohol, but in the former, snout tip and eyeball are damaged heavily and the lower jaw teeth are lost and margins of each fins are badly worn out, while the latter is a female and lacks the information of claspers. The male specimens MNHN 1987-152 and 2447 are in alcohol in good condition and possess all diagnostic characters. Of the two specimens, we designate the bigger MNHN 1987-152 as the lectotype of *D. zugei*.

As mentioned in the remarks for *D. acutirostra* above, Teng (1962) erroneously regarded his specimen of *D. acutirostra* sp. nov. as *D. zugei* and described *D. cheni* as a new species based on a gravid female specimen (TFRI 2776). Although the ratio of disc length in total length between the type specimens of *D. zugei* and *D. cheni* differs to some extent (Table 3), the tail is easily cut and the ratio is changeable. Teng (1962: fig. 65) illustrated the pelvic fin of *D. cheni* with straight posterior margin and angular outer corner. However, the examination of the type specimen revealed that such pelvic shape was an artifact caused by the condition of fixation. Thus, we could not find any significant differences between the two species, and we regard *D. cheni* as a junior synonym of *D. zugei*.

Table 3. Comparison of the lectotype and paralectotypes of *Dasyatis zugei* and the holotype of *D. cheni*.

	D. zugei		*D. cheni*
	Lectotype	Paralectotypes (n=5)	Holotype
Disc length/Preocular snout length	3.3	3.1–3.8	3.7
Interorbital width/Eye diameter	2.4	2.9–3.3	3.0
Spiracular length/Eye diameter	1.5	1.4–2.1	1.5
Total length/Disc length	2.4	2.6–2.8	2.1
Anterior margins of disc	slightly concave	slightly concave	slightly concave
Asperities behind tail spine	absent	absent	absent
Dorsal tail fold	present	present	present

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Literature cited

Annandale, N. 1909–1910. Report on the fishes taken by the Bengal fisheries steamer "Golden Crown". Part I. Batoidei. Mem. Ind. Mus., 2: 1–60, pls. 1–5.

Bigelow, H. B. and W. C. Schroeder. 1953. Sawfishes, guitarfishes, skates and rays. Pages 1–514 *in* J. Tee-Van et al., eds. Fishes of the western North Atlantic. Part 2. Mem. Sears Found. Mar. Res., Yale Univ., New Haven.

Blyth, E. 1860. On some fishes from the Sitang and tributary streams. J. Asiat. Soc. Bengal, 29: 138–174.

Boeseman, M. 1948. Some preliminary notes on Surinam sting rays, including the description of a new species. Zool. Meded., 30(2): 31–47.

Chen, J. T. F. 1948a. Notes on the fish-fauna of Taiwan in the collections of the Taiwan Museum. I. Some records of Platosomeae from Taiwan, with description of a new species of *Dasyatis*. Quart. J. Taiwan Mus., 1(3): 1–14.

Chen, J. T. F. 1948b. A synopsis of the Platosomeae of China. Quart. J. Taiwan Mus., 1(4): 23–50.

Chen, J. T. F. and I. H. Chung. 1971. A review of rays and skates or Batoidea of Taiwan. Tunghai Univ., Biol. Bull. 40, Ichthyol. Ser. 8: 1–53.

Chu, Y.-T. 1960. The cartilaginous fishes of China. Scientific Press, Peiping, x+225 pp.

Chu, Y.-T. and Q.-W. Meng. 1987. Chondrichthyes. Pages 4–46 *in* Q.-T. Cheng and B.-S. Zheng, eds. Systematic synopsis of Chinese fishes. Science Press, Beijing. (In Chinese.)

Compagno, L. J. V. and T. R. Roberts. 1982. Freshwater stingrays (Dasyatidae) of southwest Asia and New Guinea, with description of a new species of *Himantura* and reports of unidentified species. Env. Biol. Fish., 7(4): 321–339.

Compagno, L. J. V. and T. R. Roberts. 1984. Marine and freshwater stingrays (Dasyatidae) of west Africa, with description of a new species. Proc. Calif. Acad. Sci., 43(18): 283–300.

Day, F. 1878. The fishes of India: being a natural history of the fishes known to inhabit the seas and fresh water of India, Burma, and Ceylon. London, xx+778 pp., 198 pls. (2 vols.)

Faculty of Fisheries, University of Nagasaki. 1973. Group 2. Sharks and Rays. Pages 111–169, 395–402 *in* Faculty of Fisheries, University of Nagasaki, ed. Fishes of southern & western Japan edited by T. A. Glover during 1912 to 1933, vol. 1 (group 1–7). Faculty of Fisheries, University of Nagasaki, Nagasaki.

Fowler, H. W. 1941. The fishes of the groups Elasmobranchii, Holocephali, Isospondyli, and Ostariophysi obtained by the United States Bureau of Fisheries steamer "Albatross" in 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. Bull. U. S. Natn, Mus., Bull. 100, 13: i–x+1–879.

Garman, S. 1913. The Plagiostomia. Mem. Mus. Comp. Zool., Harv. Coll., 36: 1–515, pls. 1–75.

Günther, A. 1870. Catalogue of the fishes in the British Museum. Vol. 8. London, xxv+549 pp.

Jordan, D. S. and H. W. Fowler. 1903. A review of the elasmobranchiate fishes of Japan. Proc. U. S. Natn. Mus., 26(1324): 593–674.

Misra, K. S. 1969. The fauna of India and the adjacent countries, Pisces, 1, Elasmobranchii and Holocephali. 2nd. ed. Zoological Survey of India, Calcutta, xxiv+276 pp., 19 pls.

Monkolprasit, S. 1984. The cartilaginous fishes (Class Elasmobranchii) found in Thai waters and adjacent areas. Bangkok, xii+175 pp., 6 pls.

Müller, J. and J. Henle. 1841. Systematische Beschreibung der Plagiostomen. Veit und Comp., Berlin, xxii+200 pp., 60 pls.

Nakaya, K. 1984. Rajiformes. Pages 11–16 *in* H.

Masuda, K. Amaoka, C. Araga, T. Uyeno and T. Yoshino, eds. The fishes of the Japanese Archipelago. Tokai Univ. Press, Tokyo.

Rafinesque, C. S. 1810. Caratteri di nuovi generi e nuovi specie di animali e piante della Sicilia convarie osservasioni sopra i medesimi. Parts 1–3. Palermo, 105 pp., 20 pls.

Tanaka, S. 1951. Figures and descriptions of the fishes of Japan, 1–30. Rev. ed. Kazama Shobo, Tokyo, xii+557 pp., 141 pls. (In Japanese and English.)

Temminck, C. and H. Schlegel. 1850. Pisces, pt. 6. Pages 270–323 *in* Siebold's Fauna Japonica. Leiden.

Teng, H.-T. 1962. Studies on classification and distribution of the Chondrichthyes from Taiwan. Ogawa Press, Maizuru, 304 pp. (In Japanese.)

Wu, H.-W. 1929. Study of the fishes of Amoy. Part 1. Contr. Biol. Lab. Sci. Soc. China, 5(4): 1–90.

(Laboratory of Marine Zoology, Faculty of Fisheries, Hokkaido University, Hakodate 041, Japan)

日本南部海域からのアカエイ属魚類の1新種および *Dasyatis zugei* ズグエイの後模式標本の指定

西田清徳・仲谷一宏

東シナ海を含む日本の南部海域からアカエイ属の新種ヤジリエイ *Dasyatis acutirostra* が得られた．本種は眼球径が小さいこと，吻が非常に長いこと，口内底に皮弁状突起が無いこと，尾部腹面に皮褶を持つこと，胸鰭に 129–135，腹鰭に 23–28 の輻射軟骨を持つこと，腸に 22–24 の螺旋弁を持つことなどで，他種と区別される．ズグエイ *D. zugei* (Müller et Henle, 1841) の総模式標本6個体において，原記載の図示標本および各標本状態を検討した結果，マカオから得られた MNHN 1987-152 を後模式標本として指定した．ズグエイの後模式および副後模式標本とヒメズグエイ *D. cheni* Teng, 1962 の完模式標本を比較した結果，差異は認められなかった．よって後者は前者のシノニムと判断された．

(041 函館市港町 3-1-1 北海道大学水産学部水産動物学講座)